

REMARKS

In the Office Action dated January 21, 2005, claim 1 was rejected under §112, first paragraph, as failing to comply with the written description requirement because the Examiner stated the specification does not disclose the subject matter of “a second battery... for supplying power to said security components *only* upon an outage of said main voltage” and “a battery switchover device for switching power supply to security components from said second battery to said first battery *only* if power from said second battery is absent.”

Applicants filed a response on April 12, 2005, wherein Applicants pointed to language at page 10, lines 13-15 of the original specification as providing support for the above claim limitations. In an Advisory Action dated April 28, 2005, the Examiner pointed out reasons why the Examiner does not believe the cited language supports the position that the second battery supplies power to the security components only upon an outage of the mains voltage. Applicants do not necessarily agree with these statements of the Examiner, however, for the purpose of Applicants' arguments in support of patentability, it is sufficient that an outage of the mains voltage be at least one condition that causes the second battery to supply power to the security components, and it is not necessary for Applicants' patentability arguments that an outage of the mains voltage be the one and only situation in which the second battery supplies power to the security components. Claim 1, therefore has been amended to delete the word “only” from this claim element.

As to the use of the phrase “only if power from said second battery is absent” in the language relating to the description of the battery switchover device in claim 1,

the Examiner in the Advisory Action stated that there are numerous possible causes of power absence with regard to the second battery, which the Examiner stated would require myriads of power detection/indication circuitries. The Examiner therefore stated it would require undo experimentation for one of ordinary skill in the relevant art to make and use the claimed electronic device. These statements of the Examiner are respectfully traversed, because it is a simple matter merely to detect whether power from the second battery is absent, as is explained in connection with Figure 4 of the present application in the paragraph bridging pages 12 and 13. As stated therein, the positive pole 141 of the second battery 140 is connected to pin P26, which leads to the battery switchover device 18. As shown in Figure 4, the negative pole 142 of the battery 140 is connected to ground. It is only necessary for the battery switchover device 18 to detect an absence of voltage, for any reason, at pin P26 in order to determine that voltage from the battery 140 is absent. There is no need for the battery switchover device to “know” why the voltage is absent, and therefore there is no need for the capability of detecting the various possibilities suggested by the Examiner. As noted in Applicants’ previous response, the paragraph beginning at page 10, line 7 of the present specification identifies two situations (draining of the battery 140 or replacement of the battery 140) that may cause voltage from the battery 140 to be absent. Other examples are given in the paragraph bridging pages 4 and 5 of the present specification, namely incorrect polarization, oxidation of the battery contact poles or simple non-insertion of the second battery.

In view of these numerous examples, and in view of the fact that all that is necessary is for the battery switchover device 18 to detect, for any reason, that the

voltage level at pin P26 has dropped below the proper level, use of the generic language "only if power from said second battery is absent" in claim 1 is amply supported in the present specification under the provisions of §112, first paragraph.

Lastly, in the first two lines of page 13, a commercially available device (DS 1314 of Dallas Semiconductor) is identified as being suitable for use as the battery switchover device 18. Therefore, there is no "undue experimentation" of any sort that is necessary for a person of ordinary skill in the relevant art to make and use the subject matter of claim 1.

These amendments were presented in Amendment C, filed May 23, 2005, but that Amendment was not entered because the Examiner stated it raised a new issue requiring further searching or consideration, and therefore entry was not proper after the final rejection. The present Amendment is being filed together with an RCE to obtain automatic entry thereof. In the Advisory Action dated June 6, 2005, the Examiner stated that the reason for not entering Amendment "C" was because in the final rejection, claim 1 was rejected based on the limitation of "a second battery...for supplying power to said security components *only* upon an outage of said mains voltage." Applicants do not doubt that this was the case, since the Examiner is not permitted to ignore any word in a patent claim. Nevertheless, if the Examiner believed the prior art rejection of claim 1 was proper with the limitation of the word "only" in the claim, there does not seem to be a persuasive reason as to why the Examiner needed to give any thought at all as to whether the same rejection should be maintained without that limitation. Since the Examiner most likely will maintain the same rejection as in the final rejection, it is clear that Amendment "C" did not require any new searching on the part of the Examiner, and Applicant respectfully

questions whether the Examiner will find it necessary to engage in any true "further consideration" in order to maintain the same prior art rejection. Expecting that the same prior art rejection will be maintained, and in order to make the present Amendment a complete response to the Office Action, Applicants therefore repeat Applicants' traversal of the prior art rejection that was made in Applicants' original response to the final rejection (Amendment "B", filed April 12, 2005).

Claims 1, 5-8, 12 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Davies, Jr. et al. in view of Ryan, Jr. et al. and Fang et al. Claims 2 and 3 were rejected under 35 U.S.C. §103(a) as unpatentable over this combination, further in view of Wiley et al. Claims 9-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over the first combination, further in view of Mori et al.

Applicants note with appreciation that claim 4 was stated to be allowable if rewritten in independent form. The above rejections, however, are respectfully traversed, and therefore claim 4 has been retained in dependent form.

As stated in Applicants' response filed November 8, 2004, neither of the Davies, Jr. et al. or the Ryan, Jr. et al. references has anything to do with providing back-up power in general, nor with regard to the specific arrangement for supplying back-up power disclosed and claimed in the present application. Therefore, the fact that the Examiner has now additionally relied upon the teachings of the Fang et al. reference as disclosing the supply of back-up power in the event of outage of the mains voltage, does not in any way require modification of Applicants' previous arguments in support of patentability. There simply is no point of intersection between the teachings of the combination of Davies, Jr. et al./ Ryan, Jr. et al., and

the teachings of the Fang et al. reference. The Fang et al. reference is merely one of thousands of references for the general purpose of providing back-up power to devices containing volatile memory information in order to prevent loss of that information upon a power outage.

As noted in Applicants' the November 8, 2004 response, the two sources of power that are provided in the Ryan, Jr. et al. reference are in no way related to providing back-up power in the event of an outage. The second source in Ryan, Jr. et al. is used only briefly when encrypted signals are being transmitted, to prevent unauthorized detection of those signals by DPA. The Ryan, Jr. et al. reference solves this problem by switching, during the brief times that the encryption circuit is actually performing encryption operations, to power by an internal capacitor C1, so that there is no accessible external line that can be monitored for the purpose of DPA. The operation of the Ryan, Jr. et al. reference in this regard is completely independent of whatever happens if and when a power outage occurs. Providing a back-up battery or other power source that becomes operational in the event of loss of mains voltage would not in any way alter the aforementioned operation of the Ryan, Jr. et al. reference, because the Ryan, Jr. et al. reference makes use of the alternative power source exclusively for preventing DPA. There simply is no relationship whatsoever between preventing DPA and providing back-up power in the event of an outage.

In paragraph 13 at page 5 of the Office Action, the Examiner stated a person of ordinary skill in the relevant technology would be motivated to modify Davies, Jr. et al. in view of the teachings of Fang et al., "as it provides a way to conserve battery power, as well as to monitor power conditions." Applicants do not disagree that the

Fang et al. reference provides general teachings that it is desirable to achieve both of those goals, however, as noted above neither of the power supplies in the Davies et al. reference has anything whatsoever to do with conserving power or monitoring power conditions. The switch from one power source to the other in the Davies, Jr. et al. reference occurs if and when the cryptographic circuit is activated, because it is only when the cryptographic circuit is activated that the risk of DPA exists. If the condition for switching from one power source to the other in Davies, Jr. et al. were instead changed, as proposed by the Examiner, to occur when a power outage happens, this would destroy the intended operation of the Ryan, Jr. et al. circuit, because then the problem of DPA would be reintroduced. It is essential to the intended operation of the Ryan, Jr. et al. circuit that the switch from one power source to another occur when the cryptographic circuit is activated, which is why it is completely irrelevant to this aspect of operation of the Ryan, Jr. et al. reference as to whether, and under what conditions, an additional back-up power supply might be used.

As also argued in Applicants' November 8, 2004 response, the use of the first and second batteries in the arrangement disclosed and claimed in the present application is to avoid overly-frequent replacement of the security module, which contains the first battery and which, because of its nature as a security module, must be contained in the overall apparatus in a manner that makes frequent replacement difficult, or at least problematical. If the first battery always has to be used whenever a power outage occurs, this leads to more frequent replacement of the security module than would otherwise be necessary for reasons unrelated to battery depletion. This problem is solved by the present invention by providing the second

battery outside of the security module, and using only the second battery to supply security module components when a power outage occurs. Only if power from the second battery is no longer available is power from the first battery employed. Therefore, as stated in the present specification, the first battery serves purely as a reserve for when power from the second battery is not available, and thus the first battery will have to be only infrequently employed, thereby extending its life and making replacement of the security module for that reason less frequent. In fact, as described in the present specification, the normal "lifetime" of a security module for technical reasons is approximately 12 years, and with the use of the second battery to preserve the life of the first battery it is expected that the life of the first battery will also be 12 years or more, thereby ensuring that the security module does not ever have to be replaced due to battery depletion.

This problem is not even present in any of the references relied upon by the Examiner, and therefore a person of ordinary skill in the field of security devices, seeking to solve the problem of overly-frequent replacement of an encapsulated security module, due to depletion of the battery therein, would find no teachings of solutions to that problem whatsoever in any of the references relied upon by the Examiner. The Examiner has merely used the present specification as a guideline or roadmap for combining the desperate and unrelated teachings of these three references.

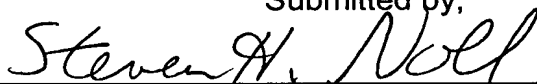
Therefore, none of claims 1, 5-8, 12 or 13 would have been obvious to a person of ordinary skill in the relevant technology under the provisions of 35 U.S.C. §103(a), based on the teachings of Davies, Jr. et al., Ryan, Jr. et al. and Fang et al.

Even if the teachings of Wiley et al. and Mori et al. references noted by the Examiner are accepted, for the above reasons modification of the Davies, Jr. et al./ Ryan, Jr. et al./ Fang et al. combination still would not result in the subject matter of dependent claims 2 and 3, nor the subject matter of dependent claims 9-11. Those dependent claims, therefore, would not have been obvious to a person of ordinary skill in the relevant technology under the provisions of 35 U.S.C. §103(a) for the same reasons discussed above in connection with independent claim 1.

Applicants have voluntarily reopened prosecution because if the Examiner determines to maintain the present rejection, it is still Applicants' intent to pursue an appeal to the Board of Patent Appeals and Interferences. Had the appeal of the application with the claims in their previous form been pursued, however, the Board could have disposed of the appeal solely on the issue under Section 112, thereby making it superfluous for the Board to undertake a review of the rejection under 35 U.S.C. §103(a). If the Examiner maintains the present rejection, it is the intention of the Applicants to renew the appeal.

Early reconsideration of the application is respectfully requested.

Submitted by,



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